

WHAT IS CLAIMED IS:

1 1. A method of generating a graphics image comprising:
2 storing a plurality of texture descriptors in a graphics memory; and
3 retrieving the plurality of texture descriptors from the graphics memory for use in
4 a graphics processor.

1 2. The method of claim 1 wherein the plurality of texture descriptors are
2 stored once in the graphics memory and retrieved a plurality of times for use by the graphics
3 processor.

1 3. The method of claim 2 wherein a base address and index are received by
2 the graphics processor for each retrieved texture descriptor.

1 4. The method of claim 3 wherein the base address and the index are
2 provided by software to the graphics processor.

1 5. The method of claim 2 wherein an address of a pointer is provided for
2 each of the plurality of texture descriptors.

1 6. The method of claim 5 wherein the address of the pointer is provided by
2 software to the graphics processor.

1 7. The method of claim 2 wherein an index to a pointer table is provided for
2 each of the plurality of texture descriptors.

1 8. The method of claim 7 wherein the index to the pointer table is provided
2 by software to the graphics processor.

1 9. The method of claim 2 wherein a pointer is provided for each of the
2 plurality of texture descriptors.

1 10. The method of claim 9 wherein the pointer is provided by software to the
2 graphics processor.

1 11. A method of generating a graphics image comprising:

2 storing a plurality of texture descriptors in a graphics memory; and
3 retrieving the plurality of texture descriptors from the graphics memory for use in
4 a graphics processor,
5 wherein the plurality of texture descriptors are stored once in the graphics
6 memory and retrieved a plurality of times for use by the graphics processor, and
7 wherein a shader program causes the retrieval of the plurality of texture
8 descriptors.

1 12. The method of claim 11 wherein the plurality of the texture descriptors are
2 simultaneously stored in the graphics processor for use by the shader program.

1 13. The method of claim 11 wherein a base address and index are provided by
2 the shader program for each of the plurality of texture descriptors.

1 14. The method of claim 11 wherein an address of a pointer is provided by the
2 shader program for each of the plurality of texture descriptors.

1 15. The method of claim 11 wherein an index to a pointer table is provided by
2 the shader program for each of the plurality of texture descriptors.

1 16. The method of claim 11 wherein a pointer is provided by the shader
2 program for each of the plurality of texture descriptors.

1 17. The method of claim 11 wherein when at least some of the plurality of
2 texture descriptors are retrieved from the graphics memory, they are prefetched.

1 18. The method of claim 17 wherein before a texture descriptor is prefetched,
2 the graphics processor receives an indication to prefetch the texture descriptor from the graphics
3 memory.

1 19. A method of generating a graphics image comprising:
2 receiving a first texture descriptor, a first hint, and a first command from a
3 graphics pipeline, the first command using the first texture descriptor;
4 retrieving a second texture descriptor identified by the first hint;
5 retrieving a first portion of a shader program comprising:

6 a second command using the second texture descriptor; and
7 a third command using a third texture descriptor; and
8 retrieving the third texture descriptor.

1 20. The method of claim 19 further comprising generating a second hint used
2 for the retrieving of the third texture descriptor.

1 21. The method of claim 19 wherein the first texture descriptor is stored in a
2 first register, the second texture descriptor is stored in a second register, and the third descriptor
3 is stored in a third register.

1 22. The method of claim 21 further comprising:
2 retrieving a second portion of the shader program comprising a fourth command
3 using a fourth texture descriptor; and
4 retrieving the fourth texture descriptor,
5 wherein the fourth texture descriptor is stored in the second register.

1 23. A method of generating a graphics image comprising:
2 retrieving a portion of a shader program comprising an instruction using a texture
3 descriptor; and
4 prefetching the texture descriptor from a graphics memory before the instruction
5 is executed.

1 24. The method of claim 23 wherein a base address and index are provided by
2 the shader program for each of the plurality of texture descriptors.

1 25. The method of claim 23 wherein an address of a pointer is provided by the
2 shader program for each of the plurality of texture descriptors.

1 26. The method of claim 23 wherein an index to a pointer table is provided by
2 the shader program for each of the plurality of texture descriptors.

1 27. The method of claim 23 wherein a pointer is provided by the shader
2 program for each of the plurality of texture descriptors.

1 28. An integrated circuit comprising:

2 a shader circuit;

3 a texture circuit coupled to the shader circuit; and

4 a frame buffer interface coupled to the texture circuit,

5 wherein the texture circuit retrieves texture descriptors from a memory.

1 29. The integrated circuit of claim 28 wherein the texture circuit retrieves

2 texture descriptors from the external memory using the frame buffer interface.

1 30. The integrated circuit of claim 29 wherein the shader provides an

2 instruction for the texture circuit to retrieve the texture descriptors from the graphics memory.

1 31. A graphics processor comprising:

2 a shader circuit;

3 a texture circuit including a texture cache coupled to the shader circuit; and

4 a frame buffer interface coupled to the texture circuit,

5 wherein the texture circuit retrieves a plurality of texture descriptors from an
6 external memory coupled to the frame buffer interface and textures are stored in the texture
7 cache.

1 32. The graphics processor of claim 31 wherein a base address and index are

2 provided by the shader to the texture circuit for each of the plurality of texture descriptors.

1 33. The method of claim 31 wherein an address of a pointer is provided by the

2 shader to the texture circuit for each of the plurality of texture descriptors.

1 34. The method of claim 31 wherein an index to a pointer table is provided by

2 the shader to the texture circuit for each of the plurality of texture descriptors.

1 35. The method of claim 31 wherein a pointer is provided by the shader to the

2 texture circuit for each of the plurality of texture descriptors.

1 36. An integrated circuit comprising:

2 a shader circuit;

3 a texture circuit including a texture cache coupled to the shader circuit; and
4 a frame buffer interface coupled to the texture circuit,
5 wherein the shader requests texture descriptors from the frame buffer interface,
6 and the texture descriptors are stored for use by the texture circuit.

1 37. The integrated circuit of claim 36 further comprising:
2 a texture descriptor cache controller coupled between the shader and the frame
3 buffer interface,
4 wherein the texture descriptor cache controller receives texture descriptor requests
5 from the shader.